

IN THE CLAIMS:

Claims 10, 14-19, 21, 45, and 55 are amended herein. Claims 11-13, 22-28, 46-52, and 57-63 are canceled herein. Please note that all claims currently pending and under consideration in the above-referenced application are shown below. Please enter these claims as amended. This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-9 (Canceled)

10. (Currently Amended) A method of selectively etching silicon, comprising:
exposing a silicon layer on a semiconductor substrate to an etch solution ~~comprising~~ consisting
of tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected
from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol,
propylene glycol, ethylene glycol, glycerin, and mixtures thereof; and
removing the silicon layer without removing at least one of an exposed oxide layer, an exposed
nitride layer, and an exposed polyimide layer also present on the semiconductor substrate.

Claims 11-13 (Canceled)

14. (Currently Amended) The method of claim 10, wherein exposing a silicon layer
on a semiconductor substrate to an etch solution ~~comprising~~ consisting of TMAH and at least one
organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol,
glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises
exposing the silicon layer to the etch solution ~~comprising~~ consisting of TMAH and propylene
glycol.

15. (Currently Amended) The method of claim 10, wherein exposing a silicon layer
on a semiconductor substrate to an etch solution ~~comprising~~ consisting of TMAH and at least one

organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution ~~comprising~~ consisting of from approximately 1% by weight to approximately 10% by weight of TMAH.

16. (Currently Amended) The method of claim 10, wherein exposing a silicon layer on a semiconductor substrate to an etch solution ~~comprising~~ consisting of TMAH and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution ~~comprising~~ consisting of approximately 6% by weight of TMAH.

17. (Currently Amended) The method of claim 10, wherein exposing a silicon layer to an etch solution ~~comprising~~ consisting of TMAH and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution ~~comprising~~ consisting of approximately 6% TMAH and approximately 94% propylene glycol.

18. (Currently Amended) A method of removing a heat-affected zone ("HAZ") on a semiconductor substrate, comprising:
~~providing a silicon substrate having a HAZ; and~~
removing ~~the~~ a HAZ on a silicon substrate without removing at least one of an exposed oxide layer and an exposed nitride layer present on the silicon substrate by exposing the silicon substrate to an etch solution comprising tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, ethylene glycol, glycerin, and mixtures thereof.

19. (Currently Amended) The method of claim 18, wherein ~~providing a silicon~~

~~substrate having a HAZ~~ removing a HAZ on a silicon substrate comprises ~~forming~~ removing the HAZ formed by laser ablation.

Claim 20 (Canceled)

21. (Currently Amended) The method of claim 18, further comprising removing at least a portion of the silicon substrate other than within the HAZ ~~with~~ using the etch solution.

Claim 22-44 (Canceled)

45. (Currently Amended) A method of forming an aperture in a through-wafer interconnect, comprising:
exposing a silicon substrate to a laser beam to form an aperture, wherein the laser beam forms a heat-affected zone ("HAZ") on the silicon substrate;
exposing the silicon substrate to an etch solution comprising tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, ethylene glycol, glycerin, and mixtures thereof; and
removing the HAZ without removing at least one of an exposed oxide layer, an exposed nitride layer, and an exposed polyimide layer present on the silicon substrate.

Claims 46-52 (Canceled)

53. (Previously Presented) The method of claim 45, further comprising filling the aperture with a conductive material to form a through-wafer interconnect.

54. (Original) The method of claim 45, further comprising removing at least a portion of the silicon substrate with the etch solution.

55. (Currently Amended) A method of forming a through-wafer interconnect, comprising:
exposing a silicon substrate to a laser beam to form an aperture, wherein the laser beam forms a heat-affected zone ("HAZ") on the silicon substrate;
removing the HAZ without removing at least one of an exposed oxide layer and an exposed nitride layer present on the silicon substrate by exposing the silicon substrate to a first etch solution comprising tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, ethylene glycol, glycerin, and mixtures thereof; and
filling the aperture with a conductive material to form a through-wafer interconnect.

Claims 56-63 (Canceled)

64. (Original) The method of claim 55, further comprising removing at least a portion of the silicon substrate with a second etch solution to enlarge a diameter of the aperture.

65. (Previously Presented) The method of claim 55, further comprising removing at least a portion of the silicon substrate with a second etch solution comprising ammonium fluoride, phosphoric acid, water, hydrogen peroxide, and at least one organic solvent.

66. (Original) The method of claim 55, further comprising smoothing at least a portion of the silicon substrate with a second etch solution comprising ammonium fluoride, phosphoric acid, water, hydrogen peroxide, and at least one organic solvent.

67. (Original) The method of claim 55, further comprising forming a passivation layer on sidewalls of the aperture before filling the aperture with the conductive material.